#### PATENT COOPERATION TREATY

### **PCT**

# INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference P2004J004	FOR FURTHER ACTION	See item 4 below	_	
nternational application No.  CT/US2005/003052  International filing date (day/month/year) 01 February 2005 (01.02.2005)		Priority date (day/month/year) 17 February 2004 (17.02.2004)		
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237				
Applicant EXXONMOBIL RESEARCH AND ENGINEERING COMPANY				

1.	This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).				
. 2.	This REPORT consists of a total of 5 sheets, including this cover sheet.				
	In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.				
3.	This report contains indications re	elating to the following items:			
	Box No. I Basis of the report				
	Box No. II	Priority	·		
	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability			
	Box No. IV	Lack of unity of invention			
	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement			
	Box No. VI	Certain documents cited			
	Box No. VII	Certain defects in the international application			
	Box No. VIII	Certain observations on the international application			
4.	4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).				
			Date of issuance of this report 22 August 2006 (22.08.2006)		
	The International Bure	au of WIPO	Authorized officer		
8	34, chemin des Colombettes 1211 Geneva 20, Switzerland		Masashi Honda		
Facs	Facsimile No. +41 22 338 82 70 e-mail: pt08@wipo.int		e-mail: pt08@wipo.int		
Form	PCT/IB/373 (January 2004)	Form PCT/IB/373 (January 2004)			

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#### PATENT COOPERATION TREATY

INTERNAT	IONAL SEARCH	ING AUTH	ORITY		,
To: PAUL E. PURWIN EXXONMOBIL RESEARCH AND ENGINEERING		PCT			
COMPAN	Y			WR	ITTEN OPINION OF THE
1545 ROU P.O. BOX	TE 22 EAST				NAL SEARCHING AUTHORITY
	ALB, NJ 08801-	0900			
	•			(PCT Rule 43bis.1)	
		· · · · · · · · · · · · · · · · · · ·		Date of mailing (day/month/year)	03 FEB 2006
Applicant's	s or agent's file re	ference		FOR FURTHER ACTION See paragraph 2 below	
P2004J004	<b>,</b>			Boo patagraph 2 0010 W	
Internation	al application No.	•	International filing date	(day/month/year)	Priority date (day/month/year)
PCT/US05	/03052		01 February 2005 (01.02	2.2005)	17 February 2004 (17.02.2004)
Internation	al Patent Classific	cation (IPC)	or both national classificat	tion and IPC	
IPC(7): C0	7C 213/00, 213/0	2, 213/08 and	1 US C1.: 564/506, 507, 5	08	'
Applicant					
EXXONM	OBIL RESEARC	H AND EN	GINEERING COMPANY		
1. This o	pinion contains ir	ndications rel	sting to the following item	ns:	· ·
$\boxtimes$	Box No. I	Basis of the	opinion		
	Box No. II	Priority			
	Box No. III	Non-establ	ishment of opinion with r	egard to novelty, inve	ntive step and industrial applicability
	Box No. IV	Lack of un	ity of invention		
Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement					
	Box No. VI	Certain do	cuments cited		
Box No. VII Certain defects in the international application			·		
	Box No. VIII	Certain obs	servations on the internati	onal application	
2. FUR	THER ACTIO	N			
Intern Autho	national Prelimina prity other than the	ary Examini his one to be	ng Authority ("TPEA")	except that this does n IPEA has notified th	be considered to be a written opinion of the s not apply where the applicant chooses an he International Bureau under Rule 66.1bis(b) lered.
IPEA	a written reply to	ogether, whe	re, considered to be a wr re appropriate, with amen expiration of 22 months	adments, before the ex	PEA, the applicant is invited to submit to the opiration of 3 months from the date of mailing whichever expires later.
L .	urther options, see				-
	•			•	
3. For fi	urther details, see	notes to Forr	n PCT/ISA/220.		1. 12 1
Name and mailing address of the ISA/ US Date of completion			JS Date of comp	letion of this opinion	Authorized officer / Outho / / / /
Mail Stop PCT, Attn: ISA/US		Peter G. O'Sullivan			
	Commissioner for P P.O. Box 1450	atents	23 October 2005 (23.10.2005) Peter G. O'Sullivan		
Alexandria, Virginia 22313-1450					Telephone No. (703) 308-1235
	No. (703) 305-32		005)	· · · · · · · · · · · · · · · · · · ·	
Form PCT/ISA/237 (cover sheet) (April 2005)					

### WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application	ιNo.	
PCT/US05/03052		 ÷

Box No. I Basis of this opinion			
	·		
1. With r	egard to the language, this opinion has been established on the basis of:		
$\boxtimes$	the international application in the language in which it was filed		
	a translation of the international application into, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).		
	egard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed ion, this opinion has been established on the basis of:		
a,	type of material		
•	a sequence listing		
	table(s) related to the sequence listing		
b.	format of material		
	on paper		
	in electronic form		
c.	time of filing/furnishing		
	contained in the international application as filed.		
	filed together with the international application in electronic form.		
	furnished subsequently to this Authority for the purposes of search.		
	- running subsequently to this running for the purposes of contain.		
3. 🗌	In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.		
4. Additi	onal comments:		

Form PCT/ISA/237(Box No. I) (April 2005)

## WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application, No. – PCT/US05/03052

Box No. V Reasoned statement under Rule 43 bis.1(a)(i) with regard to novelty, inventive step or industrial		
applicability; citations and exp  1. Statement	lanations supporting such statement	
Novelty (N)	Claims 1-13	
	Claims NONE	NO
Turney time show (TS)	Claims 1 12	YES
Inventive step (IS)	Claims 1-13 Claims NONE	NO
	Ciams NONE	1
Industrial applicability (IA)	Claims 1-13	YES
manus approximation (2.3)	Claims NONE	NO
		_
2. Citations and explanations:		
	le 33(2)-(3), because the prior art does not teach or fai	rly suggest applicant's process
Claims 1-13 meet the criteria set out in PCT Artic made or used in industry.	le 33(4), and thus have industrial applicability because	the subject matter claimed can
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### WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application, No.

PCT/US05/03u52

Box No. VIII	Certain observations on the international application				
supported by the	The following observations on the clarity of the claims, description, and drawings or on the questions whether the claims are fully supported by the description, are made:				
Claims 7-13 are following reason	objected to under PCT Rule 66.2(a)(v) as lacking clarity under PC (s): Claims 7-13 are multiple dependent olaims dependent on other	T Article 6 because claims 7-13 are indefinite for the er multiple dependent claims.			
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